

## Patent Abstracts of Japan

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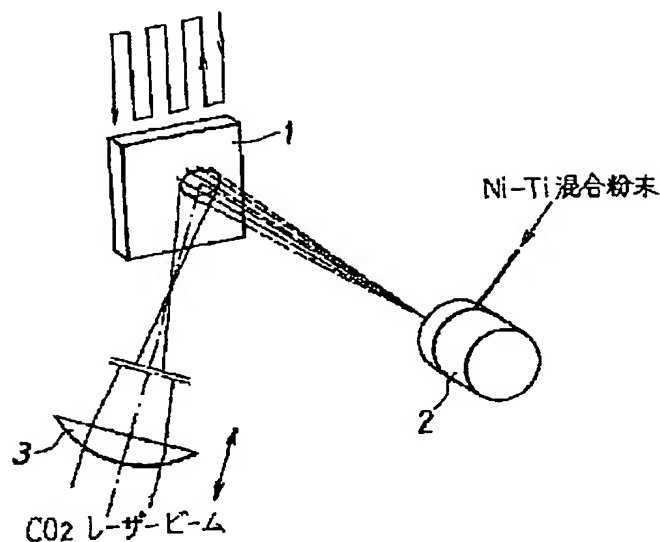
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TITLE : FORMATION OF FILM EXCELLENT IN  
EROSION RESISTANCE



ABSTRACT : PROBLEM TO BE SOLVED: To form an Ni-Ti intermetallic compd. film excellent in erosion resistance, in an inert gas hardly contg. oxygen and nitrogen, by plasma-spraying a powdery mixture of excessive Ni and Ti on the surface of the member to be treated and furthermore irradiating it with a laser at specified intensity.

SOLUTION: In an inert gas of Ar or the like in which the concn. of oxygen and nitrogen is  $\leq 1$  vol.%, the surface of a substrate as the object to be treated zigzag reciprocating at a certain pitch is plasma-sprayed with an Ni-Ti powdery mixture as a thermal spraying material from a plasma gun 2. This Ni-Ti powdery mixture contains Ni in the ratio of 58 to 65 atomic% Ni. Together with this plasma spraying, lasers from a laser source are condensed with a condensing lens 3 onto the thermal spraying position on a substrate 1 and are applied thereto. The energy density of the lasers at this time is controlled to 6 to  $12 \times 10^8$  W/m. In this way, the formation of an intermetallic compd. of Ni and Ti melted on the member to be treated and adhered thereto, the removal of fine pores and the improvement of the adhesion or the like can be attained.

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